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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/583,885	06/21/2006	Koji Miyazaki	268A 3875 PCT	8695

7590 09/04/2008  
William L. Androlia  
Quinn Emanuel Urquhart Oliver & Hedges, LLP  
10th Floor  
865 S. Figueroa Street  
Los Angeles, CA 90007

EXAMINER
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BASTIANELLI, JOHN

ART UNIT	PAPER NUMBER
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3753

MAIL DATE	DELIVERY MODE
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09/04/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/583,885	<b>Applicant(s)</b> MIYAZAKI ET AL.	
	<b>Examiner</b> John Bastianelli	<b>Art Unit</b> 3753	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 21 June 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 June 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>6/21/06</u> .   | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Specification*

1. Applicant is reminded of the proper content of an abstract of the disclosure.

A patent abstract is a concise statement of the technical disclosure of the patent and should include that which is new in the art to which the invention pertains. If the patent is of a basic nature, the entire technical disclosure may be new in the art, and the abstract should be directed to the entire disclosure. If the patent is in the nature of an improvement in an old apparatus, process, product, or composition, the abstract should include the technical disclosure of the improvement. In certain patents, particularly those for compounds and compositions, wherein the process for making and/or the use thereof are not obvious, the abstract should set forth a process for making and/or use thereof. If the new technical disclosure involves modifications or alternatives, the abstract should mention by way of example the preferred modification or alternative.

The abstract should not refer to purported merits or speculative applications of the invention and should not compare the invention with the prior art.

Where applicable, the abstract should include the following:

- (1) if a machine or apparatus, its organization and operation;
- (2) if an article, its method of making;
- (3) if a chemical compound, its identity and use;
- (4) if a mixture, its ingredients;
- (5) if a process, the steps.

Extensive mechanical and design details of apparatus should not be given.

2. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

3. The abstract of the disclosure is objected to because it is in two paragraphs, is longer than 150 words, and the phraseology is improper. Correction is required. See MPEP § 608.01(b).

The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

#### **Arrangement of the Specification**

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT.
- (e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC.
- (f) BACKGROUND OF THE INVENTION.
  - (1) Field of the Invention.
  - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (g) BRIEF SUMMARY OF THE INVENTION.
- (h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (i) DETAILED DESCRIPTION OF THE INVENTION.
- (j) CLAIM OR CLAIMS (commencing on a separate sheet).
- (k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
- (l) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

4. The disclosure is objected to because of the following informalities: The arrangement of the specification is improper. Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 4-5 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. In claim 4, the examiner does not understand the limitation “which increases its depth toward” as a groove inherently has a depth and will always increase its depth. In claim 5, the examiner does not understand the limitation “from a tangent direction” as this can be any direction from a surface.

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 1-8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The examiner does not understand the limitation of the terms “in the mentioned order” in the preamble and in the body of claim 1 and how to interpret this.

***Claim Rejections - 35 USC § 102***

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 1-5 and 8, as understood, are rejected under 35 U.S.C. 102(b) as being anticipated by Itoi JP 2002-147623 A (US 6,779,774 used for translation).

Itoi discloses a valve assembly having a housing 2 in which a first flow passage 6, a valve chamber 5 of a shut-off valve and a second flow passage 7 are provided in the mentioned order, a diaphragm 3 hermetically covering the valve chamber, the first flow passage having one end opened into an inner surface of the valve chamber to which a mid portion of the diaphragm is opposed, and a valve seat 9 formed around an opening at one end of the first flow passage, the shut-off valve being opened and closed by allowing the diaphragm to approach and separate from this valve seat, wherein a groove portion is formed in the inner surface of the valve chamber at a periphery of the valve seat and is provided with an groove outlet/inlet which is opened in an area larger than a circle having a diameter of a groove width, and the second flow passage communicates with the valve chamber through the groove outlet/inlet and the groove portion in the mentioned order. At least part of the groove outlet/inlet is opened into a groove side surface. At least a portion of the groove outlet/inlet side of the second flow passage is inclined with respect to an axis of the first flow passage. The groove portion has a groove bottom surface which increases its depth toward the groove outlet/inlet.

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The second flow passage communicates with the groove portion from a tangent direction.

11. Claims 1-5 and 8, as understood, are rejected under 35 U.S.C. 102(b) as being anticipated by Linder et al. US 5,002,086.

Linder discloses a valve assembly having a housing 12 in which a first flow passage 16, a valve chamber of a shut-off valve and a second flow passage 26 are provided in the mentioned order, a diaphragm 52 hermetically covering the valve chamber, the first flow passage having one end opened into an inner surface of the valve chamber to which a mid portion of the diaphragm is opposed, and a valve seat 20 formed around an opening at one end of the first flow passage, the shut-off valve being opened and closed by allowing the diaphragm to approach and separate from this valve seat, wherein a groove portion is formed in the inner surface of the valve chamber at a periphery of the valve seat and is provided with an groove outlet/inlet which is opened in an area larger than a circle having a diameter of a groove width, and the second flow passage communicates with the valve chamber through the groove outlet/inlet and the groove portion in the mentioned order. At least part of the groove outlet/inlet is opened into a groove side surface. At least a portion of the groove outlet/inlet side of the second flow passage is inclined with respect to an axis of the first flow passage. The groove portion has a groove bottom surface which increases its depth toward the groove outlet/inlet. The second flow passage communicates with the groove portion from a tangent direction.

***Claim Rejections - 35 USC § 103***

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claims 6-7, as understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Itoi JP 2002-147623 A (US 6,779,774 used for translation).

Itoi is silent as the dimensions of the groove and the first flow passage. It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the largest depth (h) of the groove portion of a dimension not less than 30% of the groove width (w) as a matter of design choice in order to improve the flow. It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the largest depth (h) of the groove portion (18) of a dimension at least equal to the minimum diameter (d) of the first flow passage (7) as a matter of design choice in order to improve the flow.

14. Claims 6-7, as understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Linder et al. US 5,002,086.

Linder is silent as the dimensions of the groove and the first flow passage. It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the largest depth (h) of the groove portion of a dimension not less than 30% of the groove width (w) as a matter of design choice in order to improve the flow. It would have been obvious to one having ordinary skill in the art at the time the

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invention was made to make the largest depth (h) of the groove portion (18) of a dimension at least equal to the minimum diameter (d) of the first flow passage (7) as a matter of design choice in order to improve the flow.

### ***Conclusion***

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Shih, Ejiri, Miyata, Gotch, Olivier, Yoshikawa, Miller, Yamaji, Watanabe, Kolenc, Oi, Franck, and Fukano disclose a diaphragm valve assembly with a groove portion.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Bastianelli whose telephone number is (571) 272-4921. The examiner can normally be reached on M-Th (8-6:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Greg Huson can be reached on (571) 272-4887. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

John Bastianelli  
Primary Examiner  
Art Unit 3753

/John Bastianelli/  
Primary Examiner, Art Unit 3753